

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A substrate processing unit comprising:

a processing vessel ~~for accommodating~~ that accommodates a substrate;

a cleaning gas supply system ~~for supplying~~ that supplies a cleaning gas into the processing vessel to be used in performing a cleaning of an interior of the processing vessel;

an exhauster ~~for exhausting~~ that includes rotor blades that exhaust the interior of the processing vessel by rotation of the rotor blades;

an operating state detector ~~for detecting an operating state of the exhauster~~ that detects a change in an amount of or a molecular weight of a gas that collides with the rotor blades;

and

an end point detector ~~for detecting~~ that detects an end point of the cleaning based on a detection result from the operating state detector.

Claim 2 (Currently Amended): The substrate processing unit of claim 1, wherein the operating state detector includes a vibration detector ~~for detecting~~ that detects the change in the amount of or the molecular weight of the gas that collides with the rotor blades by detecting a vibration of the exhauster.

Claim 3 (Currently Amended): The substrate processing unit of claim 2, wherein the vibration detector includes a sound wave detector ~~for detecting~~ that detects a sound wave produced by the vibration of the exhauster.

Claim 4 (Original): The substrate processing unit of claim 2, wherein the end point detector detects the end point based on a change in the intensity of the vibration.

Claim 5 (Currently Amended): The substrate processing unit of claim 1, wherein the exhaustor includes a rotatable body of revolution for exhaust, and the operating state detector includes a rotation detector ~~for detecting~~ that detects the change in the amount of or the molecular weight of the gas that collides with the rotor blades by detecting a rotation of the body of revolution.

Claim 6 (Withdrawn – Currently Amended): The substrate processing unit of claim 1, wherein the exhaustor includes a rotatable body of revolution for exhaust and a driving mechanism for rotating the body of revolution by a current supply, and wherein the operating state detector includes a current detector ~~for detecting~~ that detects a current supplied to the driving mechanism.

Claim 7 (Withdrawn – Currently Amended): The substrate processing unit of claim 1, wherein the exhaustor includes a rotatable body of revolution for exhaust and a magnetic bearing for supporting the body of revolution by a current supply, and wherein the operating state detector includes a current detector ~~for detecting~~ that detects a current supplied to the magnetic bearing.

Claim 8 (Currently Amended): A substrate processing unit comprising:

- a processing vessel ~~for accommodating~~ that accommodates a substrate;
- a process gas supply system ~~for supplying~~ that supplies a process gas into the processing vessel to be used in performing a processing on the substrate;
- an exhauster ~~for exhausting~~ that includes rotor blades that exhaust an interior of the processing vessel by rotation of the rotor blades;
- an operating state detector ~~for detecting an operating state of the exhauster~~ that detects a change in an amount of or a molecular weight of a gas that collides with the rotor blades;

and

- an end point detector ~~for detecting~~ that detects an end point of the processing based on a detection result from the operating state detector.

Claim 9 (Currently Amended): The substrate processing unit of claim 8, wherein the operating state detector includes a vibration detector ~~for detecting~~ that detects the change in the amount of or the molecular weight of the gas that collides with the rotor blades by detecting a vibration of the exhauster.

Claim 10 (Currently Amended): The substrate processing unit of claim 9, wherein the vibration detector includes a sound wave detector ~~for detecting~~ that detects a sound wave produced by the vibration of the exhauster.

Claim 11 (Original): The substrate processing unit of claim 9, wherein the end point detector detects the end point based on a change in the intensity of the vibration.

Claim 12 (Currently Amended): The substrate processing unit of claim 8, wherein the exhauster includes a rotatable body of revolution for exhaust, and the operating state detector includes a rotation detector ~~for detecting~~ that detects the change in the amount of or the molecular weight of the gas that collides with the rotor blades by detecting a rotation of the body of revolution.

Claim 13 (Withdrawn - Currently Amended): The substrate processing unit of claim 8, wherein the exhauster includes a rotatable body of revolution for exhaust and a driving mechanism for rotating the body of revolution by a current supply, and wherein the operating state detector includes a current detector ~~for detecting~~ that detects a current supplied to the driving mechanism.

Claim 14 (Withdrawn - Currently Amended): The substrate processing unit of claim 8, wherein the exhauster includes a rotatable body of revolution for exhaust and a magnetic bearing for supporting the body of revolution by a current supply, and wherein the operating state detector includes a current detector ~~for detecting~~ that detects a current supplied to the magnetic bearing.

Claims 15-16 (Canceled).

Claim 17 (New): The substrate processing unit of claim 1, wherein the end point detector detects the end point of the cleaning by determining whether the amount of or the molecular weight of a gas colliding with the rotor blades stabilizes with the progress of the cleaning following a period of initially instability.

Claim 18 (New): The substrate processing unit of claim 17, wherein the operating state detector includes a vibration detector that detects a vibration of the exhauster.

Claim 19 (New): The substrate processing unit of claim 18, wherein the vibration detector includes a sound wave detector that detects a sound wave produced by the vibration of the exhauster.

Claim 20 (New): A substrate processing unit comprising:

- a processing vessel that accommodates a substrate;
- a cleaning gas supply system that supplies a cleaning gas into the processing vessel to be used in performing a cleaning of an interior of the processing vessel;
- an exhauster that includes rotor blades that exhaust the interior of the processing vessel by rotation of the rotor blades;
- operating state detector means for detecting a change in an amount of or a molecular weight of a gas that collides with the rotor blades; and
- means for detecting an end point of the cleaning based on a detection result from the operating state detector means.

Claim 21 (New): A substrate processing unit comprising:

- a processing vessel that accommodates a substrate;
- a process gas supply system that supplies a process gas into the processing vessel to be used in performing a processing on the substrate;
- an exhauster that includes rotor blades that exhaust the interior of the processing vessel by rotation of the rotor blades;
- operating state detector means for detecting a change in an amount of or a molecular weight of a gas that collides with the rotor blades; and
- means for detecting an end point of the processing based on a detection result from the operating state detector means.